

Work Order ID 153465

Monday, November 21, 2016 9:23:06 AM

153465

Page 1

Item ID: D3512-3 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Spacer
Start Date: 11/16/2016 Start Qty: 10.00 ***10*** Cust Item ID:
Required Date: 11/21/2016 Req'd Qty: 10.00 ***10*** Customer:
Reference:

Approvals: Process Plan: DAS 21 9-89 Date: NOV 21 2016 Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3512	D								
100	FLOW WATER JET	0.00							
100									
Waterjet	Memo	0.07							
FLOW CNC Waterjet	1-Cut as per Dwg D3512 Dwg Rev: <u>D</u> Prog Rev: <u>D</u> 2-Deburr if necessary								
.									
110	QC2- Inspect parts off machine FAI/FAIB	0.00							
110									
QC	Memo	0.02							
Quality Control									
120	QC8- Inspect parts - second check	0.00							
120									
QC	Memo	0.03							
Quality Control									

DAS
38
9-89
NOV 25 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coor. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition																					
								Completed By																	
								Lead hand / Supervisor Approval Verification																	
								QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____																			

Work Order ID 153465

Monday, November 21, 2016 9:23:06 AM

153465

Page 2

Item ID: D3512-3

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Spacer

Start Date: 11/16/2016 Start Qty: 10.00

10

Cust Item ID:

Required Date: 11/21/2016 Req'd Qty: 10.00

10

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

Form as per dwg
NC BRAKE

0.06

130

Brake NC

Memo

0.03

DAS
30
9-89

10

NOV 28 2016

Brake NC

140

QC5- Inspect part completeness to step on W/O

0.00

140

QC

Memo

0.03

DAS
38
9-89

10

NOV 28 2016

Quality Control

150

Identify as per dwg & Stock Location: _____

0.00

150

Packaging

Memo

0.02

LOCATION: WA001

NOV 29 2016

DAS
6
9-89

10

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition																					
								Completed By																	
								Lead hand / Supervisor Approval Verification																	
								QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____																		

Work Order ID 153465

Monday, November 21, 2016 9:23:06 AM

153465

Page 3

Item ID: D3512-3 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Spacer
Start Date: 11/16/2016 Start Qty: 10.00 ***10*** Cust Item ID:
Required Date: 11/21/2016 Req'd Qty: 10.00 ***10*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC21- Final Inspection - Work Order Release	0.00							
160									
QC	Memo	0.17							
Quality Control									

DAS
21
9-89

NOV 29 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition				Completed By																	
								Lead hand / Supervisor Approval Verification																	
								QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			OTHER : ☐																	

Monday, November 21, 2016 9:23:06 AM

Page 1

Required Qty: 10.00

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Cde</u>
MAT020	178.399	
M133328	55.224	
M133587	0.7	
M134824	4.375	
M135779	23.1	
M136036	95	
MAT20	7.1	
M134580	7.1	

DQA: _____ Date: _____



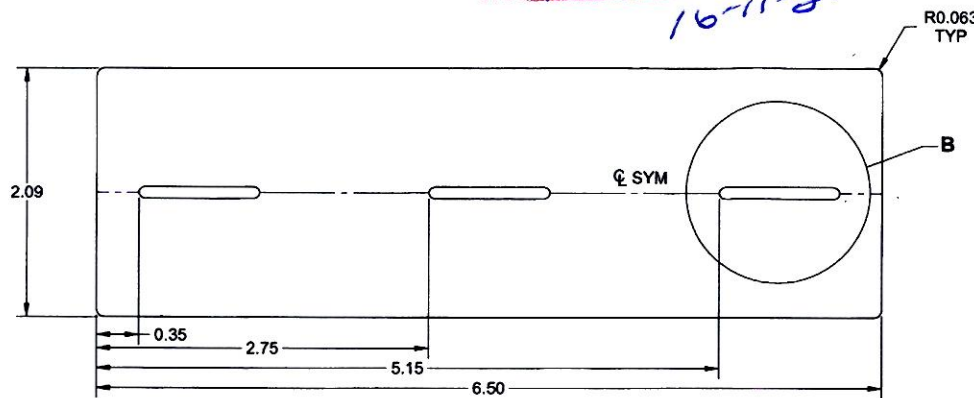
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

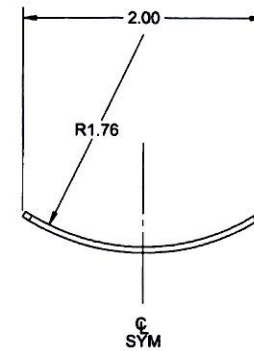
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube ☐</td> <td style="width:15%;">Cross tube ☐</td> <td style="width:15%;">Water Jet ☐</td> <td style="width:15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																																																													
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																																																																																																														
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																																																																																																														
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																																																																																																														
Large Fab ☐	Composite ☐	Supplier ☐																																																																																																															
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval																																																																																																													
Description Work Order Deviation			Disposition																																																																																																														
			Completed By																																																																																																														
			Lead hand / Supervisor Approval Verification																																																																																																														
			QC / QA Coordinator Approval																																																																																																														
<table style="width:100%; border: none;"> <tr> <td colspan="3" style="text-align: center; vertical-align: top;"> Root Cause <table style="width:100%; border: none;"> <tr><td>Environment ☐</td><td>☐</td><td>No Re-verification ☐</td></tr> <tr><td>Design ☐</td><td>☐</td><td>Operator ☐</td></tr> <tr><td>Doc/Data ☐</td><td>☐</td><td>Offset/Setup ☐</td></tr> <tr><td>Equip/Tooling ☐</td><td>☐</td><td>Supplier ☐</td></tr> <tr><td>Handling/Pre ☐</td><td>☐</td><td>Training ☐</td></tr> <tr><td>Material ☐</td><td>☐</td><td>Use for Testing ☐</td></tr> <tr><td>Internal Transport ☐</td><td>☐</td><td>Poor Information ☐</td></tr> <tr><td>Tribal Knowledge ☐</td><td>☐</td><td>Rushing ☐</td></tr> <tr><td>LOA ☐</td><td>☐</td><td>Product Improvement ☐</td></tr> <tr><td>Substation ☐</td><td>☐</td><td>Process Improvement ☐</td></tr> <tr><td>Past Expiry Date ☐</td><td>☐</td><td>Manufacturing Process ☐</td></tr> <tr><td>Misidentified ☐</td><td>☐</td><td>Past Due ☐</td></tr> </table> </td> <td colspan="3" style="text-align: center; vertical-align: top;"> FAULT CATEGORY <table style="width:100%; border: none;"> <tr><td>☐</td><td>Pressure/Forced ☐</td><td>☐</td><td>Temperature/Cure ☐</td><td>☐</td><td>Power Loss/Surge ☐</td></tr> <tr><td>☐</td><td>Bending ☐</td><td>☐</td><td>Set-up ☐</td><td>☐</td><td>Folio/Program ☐</td></tr> <tr><td>☐</td><td>Centre Not Concentric ☐</td><td>☐</td><td>BOM/Route ☐</td><td>☐</td><td>Grain ☐</td></tr> <tr><td>☐</td><td>Cracks ☐</td><td>☐</td><td>Broken/Damage/Defect ☐</td><td>☐</td><td>Weld ☐</td></tr> <tr><td>☐</td><td>Crimp/Kink/Ripple/Wave ☐</td><td>☐</td><td>Inspection Incomplete/Unqualified ☐</td><td>☐</td><td>Wrong Stock Pulled ☐</td></tr> <tr><td>☐</td><td>Cuffs ☐</td><td>☐</td><td>Contamination ☐</td><td>☐</td><td>Out of Sequence ☐</td></tr> <tr><td>☐</td><td>Crushing ☐</td><td>☐</td><td>Countersink ☐</td><td>☐</td><td>Off-set ☐</td></tr> <tr><td>☐</td><td>Heat Treat ☐</td><td>☐</td><td>Cut Too Short ☐</td><td>☐</td><td>Mislabeled ☐</td></tr> <tr><td>☐</td><td>Wave/Twist in Tube ☐</td><td>☐</td><td>Instructions Incomplete/Unclear ☐</td><td>☐</td><td>Fit/Function ☐</td></tr> <tr><td>☐</td><td>Marks/Chatter ☐</td><td>☐</td><td>Drill Holes ☐</td><td>☐</td><td>Misaligned/off center ☐</td></tr> </table> </td> </tr> <tr> <td colspan="3" style="vertical-align: top;">OTHER : _____</td> <td colspan="3"></td> </tr> </table>						Root Cause <table style="width:100%; border: none;"> <tr><td>Environment ☐</td><td>☐</td><td>No Re-verification ☐</td></tr> <tr><td>Design ☐</td><td>☐</td><td>Operator ☐</td></tr> <tr><td>Doc/Data ☐</td><td>☐</td><td>Offset/Setup ☐</td></tr> <tr><td>Equip/Tooling ☐</td><td>☐</td><td>Supplier ☐</td></tr> <tr><td>Handling/Pre ☐</td><td>☐</td><td>Training ☐</td></tr> <tr><td>Material ☐</td><td>☐</td><td>Use for Testing ☐</td></tr> <tr><td>Internal Transport ☐</td><td>☐</td><td>Poor Information ☐</td></tr> <tr><td>Tribal Knowledge ☐</td><td>☐</td><td>Rushing ☐</td></tr> <tr><td>LOA ☐</td><td>☐</td><td>Product Improvement ☐</td></tr> <tr><td>Substation ☐</td><td>☐</td><td>Process Improvement ☐</td></tr> <tr><td>Past Expiry Date ☐</td><td>☐</td><td>Manufacturing Process ☐</td></tr> <tr><td>Misidentified ☐</td><td>☐</td><td>Past Due ☐</td></tr> </table>			Environment ☐	☐	No Re-verification ☐	Design ☐	☐	Operator ☐	Doc/Data ☐	☐	Offset/Setup ☐	Equip/Tooling ☐	☐	Supplier ☐	Handling/Pre ☐	☐	Training ☐	Material ☐	☐	Use for Testing ☐	Internal Transport ☐	☐	Poor Information ☐	Tribal Knowledge ☐	☐	Rushing ☐	LOA ☐	☐	Product Improvement ☐	Substation ☐	☐	Process Improvement ☐	Past Expiry Date ☐	☐	Manufacturing Process ☐	Misidentified ☐	☐	Past Due ☐	FAULT CATEGORY <table style="width:100%; border: none;"> <tr><td>☐</td><td>Pressure/Forced ☐</td><td>☐</td><td>Temperature/Cure ☐</td><td>☐</td><td>Power Loss/Surge ☐</td></tr> <tr><td>☐</td><td>Bending ☐</td><td>☐</td><td>Set-up ☐</td><td>☐</td><td>Folio/Program ☐</td></tr> <tr><td>☐</td><td>Centre Not Concentric ☐</td><td>☐</td><td>BOM/Route ☐</td><td>☐</td><td>Grain ☐</td></tr> <tr><td>☐</td><td>Cracks ☐</td><td>☐</td><td>Broken/Damage/Defect ☐</td><td>☐</td><td>Weld ☐</td></tr> <tr><td>☐</td><td>Crimp/Kink/Ripple/Wave ☐</td><td>☐</td><td>Inspection Incomplete/Unqualified ☐</td><td>☐</td><td>Wrong Stock Pulled ☐</td></tr> <tr><td>☐</td><td>Cuffs ☐</td><td>☐</td><td>Contamination ☐</td><td>☐</td><td>Out of Sequence ☐</td></tr> <tr><td>☐</td><td>Crushing ☐</td><td>☐</td><td>Countersink ☐</td><td>☐</td><td>Off-set ☐</td></tr> <tr><td>☐</td><td>Heat Treat ☐</td><td>☐</td><td>Cut Too Short ☐</td><td>☐</td><td>Mislabeled ☐</td></tr> <tr><td>☐</td><td>Wave/Twist in Tube ☐</td><td>☐</td><td>Instructions Incomplete/Unclear ☐</td><td>☐</td><td>Fit/Function ☐</td></tr> <tr><td>☐</td><td>Marks/Chatter ☐</td><td>☐</td><td>Drill Holes ☐</td><td>☐</td><td>Misaligned/off center ☐</td></tr> </table>			☐	Pressure/Forced ☐	☐	Temperature/Cure ☐	☐	Power Loss/Surge ☐	☐	Bending ☐	☐	Set-up ☐	☐	Folio/Program ☐	☐	Centre Not Concentric ☐	☐	BOM/Route ☐	☐	Grain ☐	☐	Cracks ☐	☐	Broken/Damage/Defect ☐	☐	Weld ☐	☐	Crimp/Kink/Ripple/Wave ☐	☐	Inspection Incomplete/Unqualified ☐	☐	Wrong Stock Pulled ☐	☐	Cuffs ☐	☐	Contamination ☐	☐	Out of Sequence ☐	☐	Crushing ☐	☐	Countersink ☐	☐	Off-set ☐	☐	Heat Treat ☐	☐	Cut Too Short ☐	☐	Mislabeled ☐	☐	Wave/Twist in Tube ☐	☐	Instructions Incomplete/Unclear ☐	☐	Fit/Function ☐	☐	Marks/Chatter ☐	☐	Drill Holes ☐	☐	Misaligned/off center ☐	OTHER : _____					
Root Cause <table style="width:100%; border: none;"> <tr><td>Environment ☐</td><td>☐</td><td>No Re-verification ☐</td></tr> <tr><td>Design ☐</td><td>☐</td><td>Operator ☐</td></tr> <tr><td>Doc/Data ☐</td><td>☐</td><td>Offset/Setup ☐</td></tr> <tr><td>Equip/Tooling ☐</td><td>☐</td><td>Supplier ☐</td></tr> <tr><td>Handling/Pre ☐</td><td>☐</td><td>Training ☐</td></tr> <tr><td>Material ☐</td><td>☐</td><td>Use for Testing ☐</td></tr> <tr><td>Internal Transport ☐</td><td>☐</td><td>Poor Information ☐</td></tr> <tr><td>Tribal Knowledge ☐</td><td>☐</td><td>Rushing ☐</td></tr> <tr><td>LOA ☐</td><td>☐</td><td>Product Improvement ☐</td></tr> <tr><td>Substation ☐</td><td>☐</td><td>Process Improvement ☐</td></tr> <tr><td>Past Expiry Date ☐</td><td>☐</td><td>Manufacturing Process ☐</td></tr> <tr><td>Misidentified ☐</td><td>☐</td><td>Past Due ☐</td></tr> </table>			Environment ☐	☐	No Re-verification ☐	Design ☐	☐	Operator ☐	Doc/Data ☐	☐	Offset/Setup ☐	Equip/Tooling ☐	☐	Supplier ☐	Handling/Pre ☐	☐	Training ☐	Material ☐	☐	Use for Testing ☐	Internal Transport ☐	☐	Poor Information ☐	Tribal Knowledge ☐	☐	Rushing ☐	LOA ☐	☐	Product Improvement ☐	Substation ☐	☐	Process Improvement ☐	Past Expiry Date ☐	☐	Manufacturing Process ☐	Misidentified ☐	☐	Past Due ☐	FAULT CATEGORY <table style="width:100%; border: none;"> <tr><td>☐</td><td>Pressure/Forced ☐</td><td>☐</td><td>Temperature/Cure ☐</td><td>☐</td><td>Power Loss/Surge ☐</td></tr> <tr><td>☐</td><td>Bending ☐</td><td>☐</td><td>Set-up ☐</td><td>☐</td><td>Folio/Program ☐</td></tr> <tr><td>☐</td><td>Centre Not Concentric ☐</td><td>☐</td><td>BOM/Route ☐</td><td>☐</td><td>Grain ☐</td></tr> <tr><td>☐</td><td>Cracks ☐</td><td>☐</td><td>Broken/Damage/Defect ☐</td><td>☐</td><td>Weld ☐</td></tr> <tr><td>☐</td><td>Crimp/Kink/Ripple/Wave ☐</td><td>☐</td><td>Inspection Incomplete/Unqualified ☐</td><td>☐</td><td>Wrong Stock Pulled ☐</td></tr> <tr><td>☐</td><td>Cuffs ☐</td><td>☐</td><td>Contamination ☐</td><td>☐</td><td>Out of Sequence ☐</td></tr> <tr><td>☐</td><td>Crushing ☐</td><td>☐</td><td>Countersink ☐</td><td>☐</td><td>Off-set ☐</td></tr> <tr><td>☐</td><td>Heat Treat ☐</td><td>☐</td><td>Cut Too Short ☐</td><td>☐</td><td>Mislabeled ☐</td></tr> <tr><td>☐</td><td>Wave/Twist in Tube ☐</td><td>☐</td><td>Instructions Incomplete/Unclear ☐</td><td>☐</td><td>Fit/Function ☐</td></tr> <tr><td>☐</td><td>Marks/Chatter ☐</td><td>☐</td><td>Drill Holes ☐</td><td>☐</td><td>Misaligned/off center ☐</td></tr> </table>			☐	Pressure/Forced ☐	☐	Temperature/Cure ☐	☐	Power Loss/Surge ☐	☐	Bending ☐	☐	Set-up ☐	☐	Folio/Program ☐	☐	Centre Not Concentric ☐	☐	BOM/Route ☐	☐	Grain ☐	☐	Cracks ☐	☐	Broken/Damage/Defect ☐	☐	Weld ☐	☐	Crimp/Kink/Ripple/Wave ☐	☐	Inspection Incomplete/Unqualified ☐	☐	Wrong Stock Pulled ☐	☐	Cuffs ☐	☐	Contamination ☐	☐	Out of Sequence ☐	☐	Crushing ☐	☐	Countersink ☐	☐	Off-set ☐	☐	Heat Treat ☐	☐	Cut Too Short ☐	☐	Mislabeled ☐	☐	Wave/Twist in Tube ☐	☐	Instructions Incomplete/Unclear ☐	☐	Fit/Function ☐	☐	Marks/Chatter ☐	☐	Drill Holes ☐	☐	Misaligned/off center ☐												
Environment ☐	☐	No Re-verification ☐																																																																																																															
Design ☐	☐	Operator ☐																																																																																																															
Doc/Data ☐	☐	Offset/Setup ☐																																																																																																															
Equip/Tooling ☐	☐	Supplier ☐																																																																																																															
Handling/Pre ☐	☐	Training ☐																																																																																																															
Material ☐	☐	Use for Testing ☐																																																																																																															
Internal Transport ☐	☐	Poor Information ☐																																																																																																															
Tribal Knowledge ☐	☐	Rushing ☐																																																																																																															
LOA ☐	☐	Product Improvement ☐																																																																																																															
Substation ☐	☐	Process Improvement ☐																																																																																																															
Past Expiry Date ☐	☐	Manufacturing Process ☐																																																																																																															
Misidentified ☐	☐	Past Due ☐																																																																																																															
☐	Pressure/Forced ☐	☐	Temperature/Cure ☐	☐	Power Loss/Surge ☐																																																																																																												
☐	Bending ☐	☐	Set-up ☐	☐	Folio/Program ☐																																																																																																												
☐	Centre Not Concentric ☐	☐	BOM/Route ☐	☐	Grain ☐																																																																																																												
☐	Cracks ☐	☐	Broken/Damage/Defect ☐	☐	Weld ☐																																																																																																												
☐	Crimp/Kink/Ripple/Wave ☐	☐	Inspection Incomplete/Unqualified ☐	☐	Wrong Stock Pulled ☐																																																																																																												
☐	Cuffs ☐	☐	Contamination ☐	☐	Out of Sequence ☐																																																																																																												
☐	Crushing ☐	☐	Countersink ☐	☐	Off-set ☐																																																																																																												
☐	Heat Treat ☐	☐	Cut Too Short ☐	☐	Mislabeled ☐																																																																																																												
☐	Wave/Twist in Tube ☐	☐	Instructions Incomplete/Unclear ☐	☐	Fit/Function ☐																																																																																																												
☐	Marks/Chatter ☐	☐	Drill Holes ☐	☐	Misaligned/off center ☐																																																																																																												
OTHER : _____																																																																																																																	

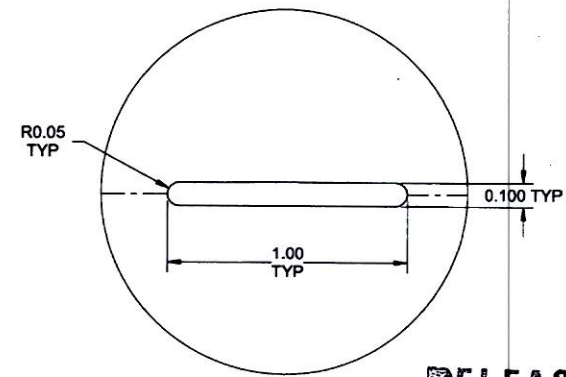
SHOP COPY
 RETURN TO
 ENGINEERING
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER
 NO. 153465 MLJ
 16-11-21



D3512-3F FLAT PATTERN



D3512-3 SPACER
 MAKE FROM D3512-3F



DETAIL B
 SCALE 2X

RELEASED
 2013-12-10
 W

NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL PER MIL-S-5059 OR AMS 5513 OR 5524 OR ASTM A240 18 GAUGE 0.050 THICK (REF DART SPEC. MS304S18GA)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.19 lbs

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DW		
CHECKED		DRAWING NO. D3512	REV. D SHEET 4 OF 4
MFG. APPR.		TITLE WEARPLATE ASSY	SCALE NTS
APPROVED		COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DE APPR.			
DATE	13.08.28		